

PATENT  
Serial No. 10/040,063

Amendment in Reply to Final Office Action of September 22, 2005

REMARKS

Reconsideration of the present application and entry of the present amendment are respectfully requested.

By means of the present amendment, the current Abstract and the specification have been amended for better conformance to U.S. practice.

In the Final Office Action, claims 1-4, 6, 8, 10-17 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,437,338 (Hoffman) in view of U.S. Patent No. 5,530,935 (Dillen). Further, claims 5, 10 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hoffman in view of Dillen and U.S. Patent No. 4,736,401 (Donges). In addition, claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Hoffman in view of Dillen and U.S. Patent No. 6,713,773 (Lyons). In response, independent claim 14 has been amended to include a feature similar to that of independent claims 1 and 8. Thus, no new issues requiring a new search have been introduced and entry of the present amendment is respectfully requested. It is respectfully submitted that claims 1-8 and 10-19 are patentable over Hoffman, Dillen, Donges and Lyons for at least the following

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reasons.

Hoffman is directed to a method and apparatus for scanning a detector array in an x-ray imaging system. As correctly noted by the Examiner, Hoffman is not concerned with temporal resolution. Rather, Hoffman is concerned with spatial resolution. Further, Hoffman specifically discloses on column 3, lines 23-30:

The patient region 102 are read at a slower rate ... On the other hand, the background regions 102 are read at a higher rate ... (Emphasis added)

In stark contrast, the present invention as recited in independent claim 1, which is also similarly recited in independent claims 8 and 14 requires, amongst other patentable elements that:

wherein the quantities of image points and/or groups of image points in the regions of interest are read out at a higher scanning rate than the scanning rate for quantities of image points and/or groups of image points in the other regions. (Emphasis added)

The Hoffman teaching of reading out the patient region, i.e., the region of interest, at a slower rate (and reading background regions at a higher rate) is diametrically opposite the recitation in independent claims 1, 8 and 14 of reading out regions of interest at a higher scanning rate than the scanning rate in the

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other regions. Thus, Hoffman teaches away from the present invention recited in independent claims 1, 8 and 14.

Dillen is cited to show higher temporal resolution for regions of interest and does not remedy this deficiency in Hoffman. In particular, Dillen is directed to an x-ray examination apparatus where "image read-out is substantially accelerated. This is achieved by discarding portions of the electronic image that is stored in the image storage-part of the CCD." (Abstract, emphasis added)

It is respectfully submitted that Dillen is representative of the prior art described on page 1, lines 14-18 of the present specification, where lines 14-15 recite that "it is known to limit the reading out to the image points or rows situated in the relevant part."

Dillen is completely silent and does not teach or suggest reading out regions of interest at a higher scanning rate than other regions, as recited in independent claims 1, 8 and 14. Any increased read-out rate in Dillen is achieved by discarding portions of the electronic image that is stored in the image storage-part of the CCD. Even if the end result of the Dillen

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discarding is accelerated read-out, such an accelerated read-out is not due to a higher scanning rate; rather it is due to the discarding of image portions. Donges and Lyons are cited to allegedly show other features and do not remedy the deficiencies in Hoffman and Dillen.

It is respectfully submitted that Hoffman, Dillen, Donges, Lyons, and combinations thereof do not teach or suggest, amongst other patentable elements, that:

wherein the quantities of image points and/or groups of image points in the regions of interest are read out at a higher scanning rate than the scanning rate for quantities of image points and/or groups of image points in the other regions (emphasis added)

as recited in independent claim 1, which is also similarly recited in independent claims 8 and 14.

Accordingly, it is respectfully submitted that independent claims 1, 8 and 14 are allowable, and allowance thereof is respectfully requested. In addition, it is respectfully submitted that claims 2-7, 10-13 and 15-19 should also be allowed at least based on their dependence from independent claims 1, 8 and 14.

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In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

In view of the above, it is respectfully submitted that the present application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

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It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required for entrance of the accompanying amendment, they may be charged to applicant's representatives Deposit Account No. 50-3649. In addition, please credit any overpayments related to any fees paid in connection with the accompanying amendment to Deposit Account No. 50-3649.

Respectfully submitted,

By   
Dicran Halajian, Reg. 39,703  
Attorney for Applicant(s)  
November 2, 2005

Enclosure: Replacement Abstract

THORNE & HALAJIAN, LLP  
Applied Technology Center  
111 West Main Street  
Bay Shore, NY 11706  
Tel: (631) 665-5139  
Fax: (631) 665-5101

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Replacement Abstract

~~The invention relates to a~~ A method for reading out ~~the image~~ points of a two-dimensional electronic image ~~sensor, sensor~~ includes subdivided the image being subdivided into at least two different regions ~~(2, 3) and where~~ the region of greater interest ROI ~~(2) being is~~ read at a scanning rate which is higher than that used for the other regions ~~(3)~~. Consequently, the region of interest ~~(2)~~ can be reproduced with a higher temporal resolution ~~while making optimum use of the limited processing capacities.~~ Preferably, ~~the~~ The sensitivity of the reading unit is adapted in conformity with the scanning rate of a relevant image point so as to take into account the fact that image points that are read out less frequently collect a light intensity over a prolonged period of time and hence may reach high signal strengths. Regions that are less frequently read out can also be irradiated with a lower radiation intensity by applying appropriate masking. The method is very suitable for the imaging of time-critical processes in medical X-ray applications.

~~Fig. 1~~